Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A processor-implemented method ~~for designing a ring cover candidate for a network,~~ comprising:

receiving, at the processor, network configuration information and traffic demand information for [[the]] a network; [[and]]

generating, by the processor, [[the]] a plurality of ring cover candidates ~~candidate~~, each ring cover candidate including a plurality of rings, based on the network configuration information and the traffic demand information, each of the rings including a plurality of network spans, where the generating the ring cover candidate includes generating [[a]] the plurality of ring cover candidates by using a different process to generate each of the ring cover candidates;

counting, for each ring cover candidate of the plurality of ring cover candidates, a number of loaded network spans covered by the ring cover candidate; and

selecting one of the plurality of ring cover candidates as a recommended ring cover candidate by selecting the one of the ring cover candidates having a highest number of loaded network spans.

2. (original) The processor-implemented method of claim 1, further comprising

generating and outputting at least one report describing characteristics of the ring cover candidate.

3. (currently amended) The processor-implemented method of claim 1, where the generating the ring cover candidate comprises creating a spanning tree from a plurality of loaded network spans of the network.

4. (previously presented) The processor-implemented method of claim 3, where the generating the ring cover candidate further comprises:

adding one or more chords to the spanning tree to create a plurality of first rings;

generating a plurality of second rings by combining two of the plurality of first rings; and

generating a plurality of third rings by combining one of the second rings with one of the first rings.

5. (previously presented) The processor-implemented method of claim 4, where the generating a plurality of third rings comprises generating derived third degree rings and focused third degree rings.

6. (previously presented) The processor-implemented method of claim 4, where at least some of the third rings and the second rings are based on an invalid first ring.

7. (original) The processor-implemented method of claim 4, further comprising storing information regarding the first rings, the second rings and the third rings in span-

linked lists associated with respective ones of a plurality of network spans covered by the first rings, the second rings and the third rings.

8. (previously presented) The processor-implemented method of claim 1, the generating the plurality of ring cover candidates comprising:

generating a first ring cover candidate by using cheapest ones of the rings formed on loaded network spans,

generating a second ring cover candidate by using cheapest ones of the rings formed on a maximum number of uncovered network spans, and

generating a third ring cover candidate by using cheapest ones of the rings from the first ring cover candidate.

9. (previously presented) The processor-implemented method of claim 2, where the at least one report includes characteristics of each of the rings included in the ring cover candidate.

10. (previously presented) The processor-implemented method of claim 9, where the characteristics of each of the rings include a ring identifier, a number of nodes covered by a corresponding one of the rings, and a length of the corresponding one of the rings.

11. (previously presented) The processor-implemented method of claim 2, where the at least one report includes information about network spans not covered by any valid ones of the rings of the ring cover candidate.

12. (previously presented) The processor-implemented method of claim 2, where the at least one report includes information about network spans not covered by any ones of the rings of the ring cover candidate.

13. (previously presented) The processor-implemented method of claim 2, where the at least one report provides characteristics of each of the plurality of ring cover candidates.

14. (canceled)

15. (canceled)

16. (currently amended) An apparatus ~~for generating at least one ring cover candidate for a network,~~ comprising:

at least one storage device to store instructions; and

at least one processor to execute the instructions to:

generate a plurality of ring cover candidates based on configuration information and traffic demand information associated with [[the]] a network, where the

at least one processor generates the plurality of ring cover candidates using a different set of parameters to generate each of the ring cover candidates,

count, for each ring cover candidate of the plurality of ring cover candidates, a number of loaded network spans covered by the ring cover candidate, and

select one of the plurality of ring cover candidates as a recommended ring cover candidate by selecting the one of the ring cover candidates having a highest number of loaded network spans.

17. (currently amended) The apparatus of claim 16, where the at least one processor is to generate a report describing characteristics of the selected ~~at least~~ one of the ring cover candidates ~~candidate~~.

18. (previously presented) The apparatus of claim 16, where the at least one processor is to generate a plurality of rings for each of the plurality of ring cover candidates, the plurality of rings including a plurality of fundamental rings, a plurality of second degree rings, and a plurality of third degree rings.

19. (previously presented) The apparatus of claim 16, where the at least one processor is further to store each of the rings of the plurality of ring cover candidates in span linked lists associated with ones of a plurality of network spans of the network covered by the rings in the at least one storage device.

20. (canceled)

21. (previously presented) The apparatus of claim 16, where, when generating the plurality of ring cover candidates, the at least one processor is:

to generate a first ring cover candidate by using shortest ones of the rings formed on loaded network spans,

to generate a second ring cover candidate by using shortest ones of the rings formed on a maximum number of uncovered network spans, and

to generate a third ring cover candidate by using shortest ones of the rings from the first ring cover candidate.

22. (previously presented) The apparatus of claim 16, where the at least one processor is further to rank each of a plurality of rings included in the plurality of ring cover candidates, the rank being based on a measure of a benefit of including a respective ring in the plurality of ring cover candidates versus a measure of a cost of including the respective ring in the plurality of ring cover candidates.

23. (currently amended) A system ~~for identifying at least one ring cover candidate for a network,~~ comprising:

means for receiving network configuration information and information representing predicted traffic demand for [[the]] a network;

means for generating a plurality of ring cover candidates using a different process to generate each of the ring cover candidates, based on the network configuration information and the information representing predicted traffic demand, each of the ring

cover candidates including a plurality of rings, and each of the rings including a plurality of network spans; [[and]]

means for counting, for each ring cover candidate of the plurality of ring cover candidates, a number of loaded network spans covered by the ring cover candidate; and

means for ~~comparing the ring cover candidates and~~ selecting one of the ring cover candidates as a recommended ring cover candidate, the recommended ring cover candidate having a highest number of loaded network spans.

24. (currently amended) A hardware ~~computer-readable~~ memory device having recorded thereon instructions for at least one processor, the instructions comprising instructions for the at least one processor to perform a method, the method comprising:

generating a plurality of ring cover candidates for a network by using a different procedure to select a respective plurality of rings for each of the ring cover candidates, the generation of the ring cover candidates being based on configuration information and information representing predicted traffic demand associated with the network, each of the rings including a plurality of network spans;

counting, for each ring cover candidate of the plurality of ring cover candidates, a number of loaded network spans covered by the ring cover candidate; and

~~comparing the ring cover candidates and~~ selecting ~~select~~ one of the ring cover candidates as a recommended ring cover candidate, the recommended ring cover candidate having a highest number ~~based on the predicted traffic demand~~ of loaded network spans ~~covered by each of the ring cover candidates~~.

25. (currently amended) The hardware ~~computer-readable~~ memory device of claim 24, where the method further comprises:

creating a spanning tree based on loaded ones of the network spans,

generating a plurality of fundamental rings based on the spanning tree, and

generating a plurality of rings based on the generated fundamental rings.

26. (currently amended) The hardware ~~computer-readable~~ memory device of claim 25, where the plurality of rings generated based on the generated fundamental rings include at least one of second degree rings [[and]] or third degree rings.

27. (currently amended) The hardware ~~computer-readable~~ memory device of claim 25, where the method further comprises:

~~attempting to create~~ creating a focused third degree ring to cover a network span when the network span is covered only by an invalid fundamental ring.

28. (currently amended) The hardware ~~computer-readable~~ memory device of claim 25, where:

the plurality of rings generated based on the generated fundamental rings are formed by combining a fundamental ring with another of the rings, and

the fundamental ring and the other ~~another~~ of the rings have a network span in common.

29. (currently amended) The hardware ~~computer-readable~~ memory device of claim 24, where the method further comprises:

calculating a ranking of each of the rings in at least one of the ring cover candidates, the ranking being based on a benefit gained by including a respective ring in the at least one ring cover candidate versus a measure of a cost incurred by including the respective ring in the at least one ring cover candidate.

30. (currently amended) The hardware ~~computer-readable~~ memory device of claim 24, where the method further comprises:

generating at least one report that describes characteristics of at least one of the ring cover candidates.